

IN THE CLAIMS:

Set forth below in ascending order, with status identifiers, is a complete listing of all claims currently under examination. Changes to any amended claims are indicated by strikethrough and underlining. This listing also reflects any cancellation and/or addition of claims.

1. (currently amended) A method of operating a graphics system having a sequence of at least two discrete at least two performance levels with each performance level being defined by a core clock rate of a graphics processing unit and a memory clock rate, the method comprising:

~~monitoring as a function of time at least one attribute of said graphics system that is indicative of a level of graphics activity;~~

monitoring a first attribute indicative of utilization of a graphics pipeline within a graphics processor core clock domain and determining whether the graphic pipeline is under-utilized or over-utilized;

monitoring a second attribute indicative of utilization of a graphics memory within a graphics memory clock domain and determining whether the graphics memory is under-utilized or over-utilized; and

selecting a performance level for said level of graphical activity to maintain a minimum desired display rate within a normal range by increasing the performance level in response to detecting an over-utilization condition and decreasing the performance level in response to detecting an under-utilization condition; and

operating the graphics system at the core clock rate and memory clock rate associated with the selected performance level, the selected performance level being a minimum performance level sufficient to maintain the display rate within the normal range.

2-6. (cancelled)

7. (currently amended) The method of claim 1 ~~claim 6~~, wherein monitoring said first attribute comprises:

monitoring the percentage of clock cycles in a graphics pipeline for which at least one stage is held up waiting for the results of another stage.

8. (currently amended) The method of claim 1 ~~claim 6~~, wherein said monitoring said second attribute comprises: monitoring the percentage of clock cycles in a graphics memory for which a memory bandwidth of said graphics memory is inadequate.

9-20. (cancelled)

21. (currently amended) A method of operating a graphics system having a sequence of at least two discrete performance levels where each performance level is defined by a core clock rate of a graphics processing unit and a memory clock rate, the performance levels including a high performance level for processing complex three-dimensional graphical images and at least one lower power, lower performance level for processing less complex graphical images, the method comprising:

monitoring as a function of time attributes of a graphics pipeline and a graphics memory of said graphics system that are indicative of a level of utilization of said graphics system;

in response to detecting a level of utilization greater than an over-utilization threshold for which a display rate of the graphics system is likely to be significantly decreased below a normal display rate, selecting a higher performance level; ~~and~~

in response to detecting a level of utilization below an under-utilization threshold, selecting a lower performance level to reduce power required by the graphics system; and

operating the graphics system at the core clock rate and memory clock rate associated with the selected performance level, the selected performance level being a minimum performance level sufficient to maintain the display rate within the normal range.

22-24. (cancelled)

25. (currently amended) A graphics system, comprising:

a graphics processor having a sequence of at least two discrete performance levels where each performance level is defined by a graphics processor core clock rate of a graphics processing unit and a memory clock rate, the performance levels including at least two performance levels, each performance level having an associated graphics processor core clock rate and a memory clock rate;

a graphics memory coupled to said graphics processor by a graphics bus and operable at said memory clock rate;

a performance level controller, said performance level controller configured to monitor, as function of time, at least one attribute of said graphics system indicative of a level of utilization of at least one component of said graphics system for which over-utilization of said component decreases a display rate, and

said performance level controller configured to increase said performance level to avoid over-utilization of said at least component;

said performance level controller configured to decrease said performance level from a high performance level to a lower performance level to avoid under-utilization of said at least one component;

the graphics system operating at the core clock rate and memory clock rate associated with the performance level selected by the performance level controller, the selected performance level being a minimum performance level capable of maintaining the display rate within a normal range.

26-27. (cancelled)